CLAIMS

What is claimed is:

1. A system comprising:

a first node employing a first cache coherency protocol; and

a detector associated with the first node that detects a condition based on responses provided by the first node to requests provided to the first node according to a second cache coherency protocol, the second cache coherency protocol being different from the first cache coherency protocol, the first node providing a response to a given one of the requests to the first node that varies based on the condition detected by the detector.

2. The system of claim 1, wherein the first node provides a non-data conflict response to a source node that provides the given one of the requests to the first node, the non-data conflict response varying based on the condition detected by the detector.

3. The system of claim 2, wherein the first node provides a first type of non-data conflict response that permits the source node to employ the second cache coherency protocol to complete the given one of the requests to the first node in response to the detector detecting an absence of a starvation condition associated with a pending transaction for data at the first node, and the first node provides a second type of non-data conflict response that causes the source node to employ the first cache coherency protocol to complete the given one of the requests to the first node in response to the detector detecting an existence of the starvation condition associated with the pending transaction for the data at the first node.

4. The system of claim 1, wherein the detector further comprises a starvation detector that detects a starvation condition associated with a pending transaction for data at the first node employing the first cache coherency protocol.

5. The system of claim 1, wherein the detector further comprises a counter that tracks a number of responses provided by the first node to the requests to the first node according to the second cache coherency protocol.

6. The system of claim 5, wherein the detector further comprises a threshold that sets the number of responses provided by the first node operative to cause the first node to provide a conflict response that causes a requesting node that provided the given one of the requests to switch from the second cache coherency protocol and to employ the first cache coherency protocol for the given one of the requests.

7. The system of claim 1, wherein the first node operates in one of at least a first conflict mode and a second conflict mode while a pending transaction for data exists at the first node employing the first cache coherency protocol, the first node switching from the first conflict mode to the second conflict mode based on the condition detected by the detector.

8. The system of claim 7, wherein the condition detected by the detector corresponds to a starvation condition associated with the pending transaction for the data at the first node employing the first cache coherency protocol.

9. The system of claim 8, wherein the first node provides a first conflict response while in the first conflict mode which enables progression of requests provided according to the second cache coherency protocol.

10. The system of claim 8, wherein the first node provides a second conflict response while in the second conflict mode which causes requests provided according to the second cache coherency protocol to reissue as corresponding requests according to the first cache coherency protocol.

11. The system of claim 1, further comprising:

a source node that provides the given one of the requests as a source broadcast request for data according to the second cache coherency protocol; and

an owner node that comprises an associated cache that includes the data in a cache line having a first state that defines the owner node as an ordering point for the data, the owner node receives the source broadcast request for the data and provides an ownership data response to the source node, the source node filling the data in an associated cache line of the source node in response to receiving the ownership data response from the owner node, and the source node transitioning a state of the associated cache line of the source node to define the source node as a new cache ordering point for the data.

12. The system of claim 1, wherein the first cache coherency protocol comprises a forward progress cache coherency protocol.

13 The system of claim 12, wherein the forward progress protocol comprises one of a null-directory cache coherency protocol and a directory-based cache coherency protocol.

14. The system of claim 12, wherein the second cache coherency protocol comprises a source broadcast cache coherency protocol.

15. A multi-processor system comprising:

a requesting processor node that provides a source broadcast request for desired data to the system according to a broadcast-based cache coherency protocol; and

another processor node employing a forward progress cache coherency protocol for a pending transaction for the desired data, the another processor node providing a first type of conflict response to the source broadcast request for the desired data while in a first operating mode for the pending transaction for the desired data, the first type of conflict response permitting the source broadcast request for the desired data to make forward progress according to the broadcast-based cache coherency protocol, the another processor node switching to a second operating mode after providing at least one of the first type of conflict responses, the another processor node providing a second type of conflict response to the source broadcast request for the desired data while in the second operating mode for the pending transaction for the desired data.

16. The system of claim 15, wherein the second type of conflict response causes the requesting processor node to employ the forward progress cache coherency protocol in connection with completing the source broadcast request for the desired data.

17. The system of claim 15, further comprising a detector that detects a quantity of the first type of conflict responses provided by the another processor node, the another processor node switching from the first operating mode to the second operating mode based on the quantity of the first type of conflict responses detected by the detector.

18. The system of claim 17, wherein the detector further comprises a starvation detector that detects a starvation condition associated with the pending transaction for the desired data at the another processor node.

19. The system of claim 18, wherein the starvation detector further comprises a counter that counts the quantity of the first type of conflict responses provided by the another processor node associated with the pending transaction for the desired data.

20. The system of claim 19, wherein the starvation detector further comprises a threshold that defines the number of the first type of conflict responses provided by the another processor node after which the another processor node will switch to the second operating mode.

21. The system of claim 15, wherein each of the first type of conflict response and the second type of conflict response comprises a respective non-data conflict response.

22. The system of claim 15, further comprising:

an owner processor node that comprises an associated cache that includes the desired data in a cache line having a state that defines the owner processor node as a cache ordering point for the data, the owner processor node providing an ownership data response to the source broadcast request for the desired data, the requesting processor node filling the desired data in an associated cache line of the requesting processor node in response to receiving the ownership data response from the owner node, and the requesting processor node transitioning a state of the associated cache line of the requesting processor node to define the requesting processor node as a new cache ordering point for the data.

23. A multi-processor system, comprising:

means for receiving at least one request for a line of data at a target node while the target node is employing a first cache coherency protocol for a pending transaction for the line of data, the at least one request for the line of data being provided according to a second cache coherency protocol;

means for providing a first type of conflict response to the at least one request for the line of data from the target node prior to detecting a starvation condition associated with the pending transaction for the line of data; and

means for providing a second type of conflict response to the at least one request for the line of data from the target node after detecting the starvation condition associated with the pending transaction for the line of data.

24. The system of claim 23, wherein:

the first cache coherency protocol comprises a forward progress cache coherency protocol; and

the second cache coherency protocol comprises a source broadcast cache coherency protocol.

25. The system of claim 23, wherein first type of conflict response permits the at least one request for the line of data to progress according to the second cache coherency protocol.

26. The system of claim 25, wherein second type of conflict response causes the at least one request for the line of data to reissue employing the first cache coherency protocol.

27. The system of claim 23, further comprising means for detecting the starvation condition associated with the pending transaction for the line of data at the target node.

28. The system of claim 27, wherein the means for detecting the starvation condition further comprises means for counting a number of the first type of conflict responses provided from the target node and for enabling the means for providing the second type of conflict response to provide the second type of conflict response after a threshold number of the first type of conflict responses have been provided from the target node.

29. A method comprising:

providing a first type of conflict response from a target node in response to receiving a request for data at the target node while the target node employs a first cache coherency protocol for a pending transaction for the data, the request for the data being provided by a requester according to a second cache coherency protocol; and

after a predetermined condition has been met, providing a second type of conflict response from the target node, the second type of conflict response being provided in response to receiving each subsequent request for the data at the target node while the target node employs the first cache coherency protocol for the pending transaction.

30. The method of claim 29, wherein the predetermined condition corresponds to a starvation condition associated with the pending transaction at the target node.

31. The method of claim 30, the method further comprising counting the first type of conflict responses provided from the target node and providing the second type of conflict response after the predetermined number of the first type of conflict responses have been provided, the counting providing an indication of the starvation condition associated with the pending transaction at the target node.

32. The method of claim 29, wherein the first cache coherency protocol comprises a forward progress cache coherency protocol, and the second cache coherency protocol comprises a source broadcast cache coherency protocol.

33. The method of claim 29, wherein first type of conflict response permits the requester to complete the request for the data according to the second cache coherency protocol.

34. The method of claim 29, wherein second type of conflict response causes the requester to reissue the request for the data employing the first cache coherency protocol.